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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/032,717	10/23/2001	Andre R. Abad	35718/237005 (5718-118)	5409
S26	7590	02/18/2004	EXAMINER	
ALSTON & BIRD LLP BANK OF AMERICA PLAZA 101 SOUTH TRYON STREET, SUITE 4000 CHARLOTTE, NC 28280-4000			KUBELIK, ANNE R	
			ART UNIT	PAPER NUMBER
			1638	

DATE MAILED: 02/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Application No. 10/032,717	Applicant(s) ABAD ET AL.	
	Examiner Anne R. Kubelik	Art Unit 1638	

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

THE REPLY FILED 2/2/04 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

- a) ☐ The period for reply expires _____ months from the mailing date of the final rejection.
- b) ☒ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection. ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.
2. ☒ The proposed amendment(s) will not be entered because:
- (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);
 - (b) ☒ they raise the issue of new matter (see Note below);
 - (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or
 - (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

NOTE: See Continuation Sheet.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.
4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).
5. ☒ The a) ☐ affidavit, b) ☐ exhibit, or c) ☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: See Continuation Sheet.
6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.
7. ☒ For purposes of Appeal, the proposed amendment(s) a) ☒ will not be entered or b) ☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

The status of the claim(s) is (or will be) as follows:

Claim(s) allowed: _____.

Claim(s) objected to: _____.

Claim(s) rejected: 1-3, 9-12, 17-19, 38-40, 42-46, 48-52, 54-64.

Claim(s) withdrawn from consideration: _____.

8. ☐ The drawing correction filed on _____ is a) ☐ approved or b) ☐ disapproved by the Examiner.
9. ☒ Note the attached Information Disclosure Statement(s) (PTO-1449) Paper No(s). 2/2/04.
10. ☒ Other: See Continuation Sheet

Continuation of 2. NOTE: New Matter: There is no support in the specification for washing at 4C below 60-65C (i.e., 56-61C). Pg 32-33 of the specification do not state a thermal melting point temperature of 60-65C for the hybrid.

Continuation of 5. does NOT place the application in condition for allowance because:

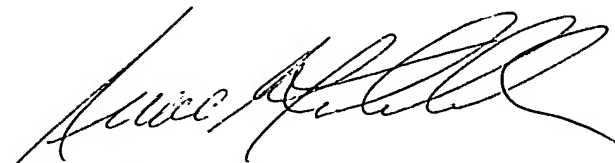
112 1st enablement: Applicant requests clarification regarding the applicability of this rejection to nucleic acids with 93%, 94% and 95% identity to SEQ ID NO:1. Nucleic acids that have 95% identity to SEQ ID NO:1 would have up to 181 nucleotide substitutions, and thus could encode proteins with up to 181 amino acid or more substitutions; these proteins would have only 85% identity to SEQ ID NO:2. The specification provides no guidance for which 181 amino acids to substitute and does not teach nucleic acid encoding proteins with 85% identity to SEQ ID NO:2. Thus, undue trial and error experimentation would be required to make the claimed nucleic acids. Applicant urges that one of skill in the art could readily determine the percent identity of sequence to SEQ ID NO:1 and could assay the nucleic acid; the specification teaches conservative amino acid substitution, and could assay the activity of variants, citing Marrone et al and Czapla et al. This is not found persuasive. The specification provides no guidance as to which amino acids of SEQ ID NO:2 are critical for function. Pg 18 of the specification does not provide guidance regarding conservative substitutions - it only discusses variant nucleic acids encoding SEQ ID NO:2 (see lines 19-22). Furthermore, Lazar et al and Hill et al, cited in a prior Office action, teach that conservative substitution of amino acids is unpredictable. Marrone et al and Czapla et al could not be considered because they were not sent. Applicant urges that the specification teaches nucleic acids with 55-69% identity to SEQ ID NO:1 in the form of the truncations SEQ ID NOs:15 and 11 and the maize-optimized SEQ ID NO:9. This is not found persuasive. The specification teaches a fragment, in the form of SEQ ID NO:15, but does not teach an additional sequence. While the query match similarity may be 55%, the query match value is affected by differences in length of the sequences. The local match similarity between SEQ ID NO:15 and the first half of SEQ ID NO:1 is 100%; thus SEQ ID NO:15 does not teach which amino acids to substitute in SEQ ID NO:2. SEQ ID NO:11 only provides guidance for a single insertion of 4 amino acids in the 669 amino acid long SEQ ID NO:16 and does not provide guidance for nucleic acids encoding proteins with 85% or 70% identity to SEQ ID NO:2 (which by the analysis above and in the previous Office action, nucleic acids with 90 or 95% identity to SEQ ID NO:1 encompass). SEQ ID NO:9 encodes SEQ ID NO:2; the specification is enabled for nucleic acids encoding SEQ ID NO:2, but is not enabled for nucleic acids that have 90% identity to SEQ ID NO:1 but that do not encode SEQ ID NO:2. Applicant urges that DNA shuffling is routine in the art and cites US 5,837,458 and Minshull et al and Christians et al. This is not found persuasive. A patent must teach how to make, not how to find; thus the specification must teach which amino acids to modify to make nucleic acid encoding proteins with 70 or 85% identity to SEQ ID NO:2. Minshull et al and Christians et al could not be considered because they were not sent.

112, 1st, written description: Applicant urges that the specification teaches nucleic acids with 55-69% identity to SEQ ID NO:1 in the form of the truncations SEQ ID NOs:15 and 11 and the maize-optimized SEQ ID NO:9. This is not found persuasive. While the query match similarity may be 55%, the query match value is affected by differences in length of the sequences. The local match similarity between SEQ ID NO:15 and the first half of SEQ ID NO:1 is 100%; thus SEQ ID NO:15 does not describe nucleic acids encoding proteins with 70% or 85% identity to the full-length of SEQ ID NO:2. SEQ ID NO:11 only describes a nucleic acid encoding a protein with a single insertion of 4 amino acids in the 669 amino acid long SEQ ID NO:16 and does not describe nucleic acids encoding proteins with 85% or 70% identity to SEQ ID NO:2 or nucleic acids with 90 or 95% identity to SEQ ID NO:1. SEQ ID NO:9 encodes SEQ ID NO:2; the specification describes nucleic acids encoding SEQ ID NO:2, but does not describe nucleic acids that have 90% identity to SEQ ID NO:1 but that do not encode SEQ ID NO:2. Applicant urges that the specification and claims meet the requirements of Eli Lilly and Amgen because an exemplary sequence is SEQ ID NO:1 and all claimed nucleic acids are defined in reference to SEQ ID NO:1, have taught assays to test function, and have envisioned the detailed construction of the gene to distinguish it for other materials. This is not found persuasive. Eli Lilly at pg 1406 states "A description of a genus of cDNAs may be achieved by means of a recitation of a representative number of cDNAs, defined by nucleotide sequence, falling within the scope of the genus or of a recitation of structural features common to the members of the genus, which features constitute a substantial portion of the genus." A single nucleic acid of SEQ ID NO:1 does not constitute a significant portion of the genus of nucleic acids with 90% identity to SEQ ID NO:1. The specification does not describe the structural features that distinguish nucleic acids with 90% identity to SEQ ID NO:1 that encode pesticidal proteins from nucleic acids with 90% identity to SEQ ID NO:1 that do not encode pesticidal proteins. Applicant urges that claims 42, 48 and 54 have been amended to recite a hybridization time and wash temperature, that hybridization techniques are well established in the art, that the critical features of the wash is the ionic strength and temperature, quoting a few paragraphs from Moore et al, and that one of skill would recognize that a wash would be maintained until equilibrium is reached and that extending the wash beyond equilibrium will not influence the outcome. This is not found persuasive. Lack of recitation of wash time means that very short wash times are encompassed by the claims, and in very short wash times DNAs of varying similarity to the reference DNA hybridize. Furthermore, as any lab researcher who has ever forgotten about a washing blot knows it is very possible to wash off the probe; at equilibrium no detectable probe is left. The paragraphs of Moore et al could not be considered without submission of the entire reference, which would put the paragraphs in context. Applicant also urges that claims 42, 48 and 54 contain limitations requiring the nucleic acids have pesticidal activity, which is taught in the specification and known in the art. This is not found persuasive because the specification does not teach the structural features (i.e. sequence) of any nucleic acid that encodes a pesticidal protein and that hybridizes to SEQ ID NO:1 wherein the nucleic acid is not a truncation of SEQ ID NO:1 itself.

112, 2nd: Applicant urges that the claims have been amended to recite a hybridization time and a wash temperature. This is not found persuasive because without recitation of a wash time, the metes and bounds of the claimed nucleic acids are unclear.

102b; Applicant urges that the Michaels sequence and the instant sequence are only 70.8% identical and one would not expect the sequences to hybridize under the recited high stringency conditions. This is not found persuasive because wash times are not recited.

Continuation of 10. Other: Cite No. 22 of the IDS could not be considered because the journal or book name and pages are missing..

A handwritten signature in black ink, appearing to read 'Anne Kubelik', with a stylized, flowing script.

**ANNE KUBELIK
PATENT EXAMINER**